

CHARGE NUMBER : Various
PROGRAM TITLE : Packaging Development
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I. Metallized Paper - Package Liner Material¹

A production machine trial run of the Nicolet 5-D metallized paper liner material was made in the Manufacturing Center on February 17. The duration of the run after making appropriate adjustments to the packer was about ten minutes.

The opinion at that time was that the metallized paper could be made to run on any of the soft pack machines but a new system for detecting missing overwraps and missing packages in the cartons would be required.

A quality audit showed no differences between the experimental and the control packages.

Storage tests indicated that the moisture-keeping properties of the packages depended on the quality of the overwrap seals. Under both Hot-Wet (90°F, 85% R.H.) and Supermarket (75°F, 40% R.H.) Conditions, the performance of the experimental packs and the standard packs were about the same. Under the Hot-Dry (110°F, 15% R.H.) Conditions, the experimental packages provided slightly better protection than the control packs. Examination of the overwraps showed that the experimental package overwraps had a more complete seal on the top end. Since no adjustments were made to the overwrap machine, the better seal on the tops and only on the tops of the experimental packages is attributed to the lower heat conductivity of the metallized paper.

Instron crushing tests of the cigarette packages showed that the metallized paper provided less crushing strength than the foil (1.1 kg versus 1.7 kg).

Both the metallized paper and the foil liner paper became stained in contact with the cigarettes. The degree of the color change depended upon the temperature under which the packages were stored. The color change of the two materials was different. The foil paper color change was toward yellow. The color change of the metallized paper was

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more uniform than that of the foil paper and tended toward brown.

An HTI test has been recommended to determine how the packages will perform with normal handling by the consumer.

II. Four's Packs Shelf Life Extension²

Preliminary tests indicate that carton overwraps are of value in extending the shelf life of Four's packages.

Storage tests were conducted with Marlboro (85) Four's cartons overwrapped with K-140 Cellophane and Hercules BXT Polypropylene film. Cartons with no overwraps were included in the test. Under Hot-Dry (110°F, 15% R.H.) Storage Conditions, the results were as follows:

Tobacco Moisture (Oven Volatiles)

	<u>Initial</u>	<u>One Week</u>	<u>Two Weeks</u>	<u>Three Weeks</u>
Polypropylene Carton Overwrap	13.0%	12.3%	11.3%	10.4%
Control (No Overwrap)	13.0%	9.9%	7.2%	6.3%
K-Cellophane Carton Overwrap	12.4%	11.1%	10.7%	9.4%
Control (No Overwrap)	12.4%	8.7%	7.1%	5.7%

The tests were also made under Hot-Wet (90°F, 85% R.H.) and Supermarket (75°F, 40% R.H.) Conditions. Under all three conditions, both overwrap films provided about the same level of protection. The cost of the polypropylene film, however, is about half of the cost of the K-140 Cellophane.

III. References

1. Notebook #7076; Pages 38-43.
2. Notebook #7076; Pages 46-48.



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